

## VEGETATION APPENDIX

### VEGETATION CONDITION

Adequate vegetation condition, composition and production is needed to provide for multiple use and sustained yield on public lands. When rating vegetation condition the common unit or area for measurement is called a site. The site is a distinctive kind of land, based on soils and environmental factors that differ from other land in its ability to produce a characteristic potential natural plant community.

Many of the methods for rating vegetation condition incorporate the climax theory. This theory proposes that there is a specific vegetation community which will occur on each site in the absence of disturbance such as fire, grazing, or plowing. A climax community has attained a steady state with its environment. Therefore, whenever a disturbance occurs and then is removed, it is proposed that the site would eventually return to a climax state.

In rangelands the site is referred to as a range site. A site which deteriorates under continuous disturbance is rated as poor condition. Rangeland in poor condition would have very few if any plant species that would commonly be found in the climax community for the site. Condition is divided into four categories of poor, fair, good, or excellent. An excellent condition rating may be similar to the climax on that range site.

The early surveys (some of which occurred in the 1950s) such as the Missouri River basin study (USDI, BLM 1979a) rated range condition in the Big Dry Resource Area and established stocking rates. These surveys were based on range sites and the climax theory. The climax vegetation composition was identified based on information available at that time. The 1976 Soil Conservation Service Technical Guide (available in the Big Dry Resource Area office) identifies vegetation composition for each range site. These guides were revised in 1983 and 1985. In some cases, range condition ratings would change using the revised Soil Conservation Service Technical Guides.

Approximately 1.18 million acres of public land included in the Big Dry Environmental Impact Statement Vegetation Allocation (USDI, BLM 1982b) were inventoried using the Soil Vegetation and Inventory Method. These inventories were conducted in 1979 to 1980. Sites were referred to as range sites and condition classes of poor, fair, good, and excellent were used. The range site condition was rated based on vegetation composition described in the Soil Conservation Service Technical Guide. As mentioned in the previous paragraph, these guides have been and are

being updated. A range site rated in good condition in 1979 may have been rated differently if the current Soil Conservation Service Technical Guides were used.

Range condition undefined may have a variety of meanings to different people. A recreationist may have a different picture of what good and excellent range condition is compared to a livestock producer. In this document, range condition ratings are based on the climax theory.

An ecological site is also a distinctive kind of land based on soils and environmental factors that differ from other land in its ability to produce a characteristic potential natural plant community. It is not restricted to rangelands and may refer to other lands such as forested areas. Ecologically, the vegetation is rated as early, mid, late seral and potential natural community.

Currently, the BLM inventories rangeland vegetation using Ecological Site Inventories. The plant composition for the ecological site is described in the Soil Conservation Service Technical Guide for rangeland and Classification and Management of Riparian and Wetland Sites in Central and Eastern Montana (Hansen et al. 1990) for riparian/wetland areas.

The “desired plant community” concept has been proposed as another method for describing vegetation based on multiple-use objectives. The objectives for an area would be identified. The species of plants that could occur within the ecological site would be listed. Then the composition, production, or cover of species which would meet the objectives would be identified. For example, an ecological site is capable of producing a mature cottonwood canopy cover of 20 to 50 percent. A 30 percent canopy cover of mature cottonwood trees may be desired in a recreation area. Management actions would be undertaken to favor maintaining or increasing mature cottonwood trees at 30 percent canopy cover. Recreation, wildlife, livestock, vegetation, and watershed are some of the factors which may be considered when identifying a desired plant community.

In most cases, the vegetation will be managed to achieve an ecological seral stage of late seral plant communities or potential natural community with the exception of tame pastures. Areas in a late seral stage or potential natural community should be able to provide for the wide range of uses and objectives for public lands.

New activity plans could describe a desired plant community. The desired plant community may be any ecological

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seral stage. The desired plant community must:

- be within the capability of the site.
- be measurable and be related to a specific location.
- be attainable within a specific time frame.
- not result in irreversible site degradation.
- be determined and reviewed by an interdisciplinary team.

The desired plant community could be described in terms of percent composition, production, cover, frequency, or age class for a species or group of species. The objective will usually be written to describe the desired mix of life forms (grasses, forbs, and shrubs) for a site or area. Current guidance on desired plant communities for BLM is in draft form (Instruction Memorandum 91-290).

In 1991, a report by the Society for Range Management stated:

“Once the desired plant community has been decided upon for a given situation, existing vegetation should be rated according to its similarity to the desired plant community. If present vegetation is reasonably close to the desired plant community it should be described as ‘meeting management objectives’ and, if it is not, as ‘not meeting management objectives.’ The trend in similarity to desired plant community may be more important to managers and other interested parties. Trend could be described as toward the desired plant community, away from desired plant community, or not apparent.”

## RIPARIAN/WETLAND MANAGEMENT

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**TABLE 75**  
**RIPARIAN/WETLAND COMMUNITIES**  
**IN THE PLANNING AREA**

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### Coniferous Tree Communities

- Ponderosa Pine/Common Chokecherry Habitat Type
- Rocky Mountain Juniper Habitat Type

### Deciduous Tree Communities

- Box Elder/Common Chokecherry Habitat Type
- Green Ash/Common Chokecherry Habitat Type
- Quaking Aspen/Red-Osier Habitat Type<sup>1</sup>

### Shrub Communities

- Black Greasewood/Western Wheatgrass Habitat Type
- Geyer Willow/Beaked Sedge Habitat Type
- Geyer Willow/Bluejoint Reedgrass Habitat Type<sup>1</sup>
- Shrubby Cinquefoil/Tufted Hairgrass Habitat Type<sup>1</sup>
- Silver Sagebrush/Western Wheatgrass Habitat Type
- Yellow Willow/Beaked Sedge Habitat Type
- Yellow Willow/Bluejoint Reedgrass Habitat Type

### Graminoid Communities

- Alkali Bulrush Habitat Type
- Beaked Sedge Habitat Type
- Bluejoint Reedgrass Habitat Type
- Common Reed Habitat Type
- Hardstem Bulrush Habitat Type
- Inland Saltgrass Habitat Type
- Prairie Cordgrass Habitat Type
- Reed Canarygrass Habitat Type
- Sharp Bulrush Habitat Type<sup>1</sup>
- Water Sedge Habitat Type<sup>1</sup>
- Western Wheatgrass Habitat Type

### Forb Communities

- Common Cattail Habitat Type
  - Water Horsetail Habitat Type
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SOURCE: Hansen et al. 1990.

<sup>1</sup>Minor or uncommon in the planning area.

## WEED MANAGEMENT

Desirable plant species such as sagebrush may be intermixed with noxious weeds. Although chemical treatment would not normally be designed to reduce sagebrush, occasionally nontarget species may be damaged.

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**TABLE 76**  
**MONTANA NOXIOUS WEED LIST**  
**MARCH 1991**

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### CATEGORY 1

- \* Currently established and generally widespread
- \* Awareness and education
- \* Containment and suppression
- \* Prevention

Canada thistle (*Cirsium arvense*)  
Field bindweed (*Convolvulus arvensis*)  
Whiteweed or Hoary Cress (*Cardaria draba*)  
Leafy spurge (*Euphorbia esula*)  
Russian knapweed (*Acropetilon repens*)  
Spotted knapweed (*Centaurea maculosa*)  
Diffuse knapweed (*Centaurea diffusa*)  
Dalmatian toadflax (*Linaria dalmatica*)  
St. Johnswort (*Hypericum perforatum*)

### CATEGORY 2

- \* Recently introduced or rapidly spreading
- \* Awareness and education
- \* Early detection
- \* Monitoring and containment
- \* Eradication when possible

Dyers Woad (*Isatis tinctoria*)  
Purple loosestrife (*Lythrum salicaria* and *L. virgatum*)  
Sulfur (erect) cinquefoil (*Potentilla recta*)

### CATEGORY 3

- \* Not detected in the state or found only in small, scattered, localized infestations
- \* Awareness and education
- \* Early detection
- \* Immediate action to eradicate

Yellow Starthistle (*Centaurea solstitialis*)  
Common Crupina (*Crupina vulgaris*)  
Rush Skeletonweed (*Chondrilla juncea*)

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SOURCE: State of Montana, Department of Agriculture 1991.

NOTE: Category 1. These species are currently established and widespread in the state of Montana. Management actions include containment, suppression, and prevention of these weeds.

Category 2. These species are recently introduced or rapidly spreading. Management actions include early detection, monitoring and containment, and eradication when possible.

Category 3. These species have not been detected or are found only in small, scattered, localized infestations. Management actions include early detection and immediate action to eradicate.

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**TABLE 77**  
**MAXIMUM HERBICIDE APPLICATION RATES BY AREA**  
**(Pounds Active Ingredient Per Acre)**

<b>Herbicide*</b>	<b>Rangeland</b>	<b>Forestland</b>	<b>Oil and Gas Sites</b>	<b>Rights-of-Way</b>	<b>Recreation Sites</b>
Atrazine	1	4	40	40	1
Bromacil	-	-	16	16	-
Bromacil+ Diuron	-	-	20	20	-
Chlorsulfuron	-	.125	.140	.140	.125
Clopyralid	0.5	-	-	12	12
2,4-D	3	3	3	3	3
Dicamba	6	6	6	6	6
Diuron	-	-	32	32	-
Glyphosate	3	3	3	3	3
Haxazinone	0.67	3	10.8	10.8	3
Imazapyr	1	1.5	1.5	1.5	1.5
Mefluidide	-	-	0.25	0.25	-
Metsulfuron Methyl	-	-	1.2	1.2	-
Picloram	1	1	1	1	1
Simazine	-	4	10	10	4
Sulfometuron Methyl	-	-	.56	.56	-
Tebuthiuron	4	5	6	6	4
Triclopyr	1.5	4	8	8	1.5
2, 4 - D and Dicamba	2, 2.5	2, 2.5	2, 2.5	2, 0.5	2, 2.5
2, 4 - D and Picloran	1, 0.5	2, 0.5	2, 0.5	2, 0.5	2, 0.5

SOURCE: USDI, BLM 1991b.

\*Tradenames are found in appendix M of the Final Environmental Impact Statement Vegetation Treatment on BLM Lands in Thirteen Western States (USDI, BLM 1991b).